

Chapter Five

Other Notifiable Diseases

There are fifty-one notifiable diseases and conditions in Tennessee. Of these, vector-borne diseases, vaccine-preventable diseases, and meningitis are the primary diseases to be discussed in this chapter. Attention will also be given to the reported incidence of drug-resistant bacteria in Davidson County. Because of the small numbers of reported cases and infrequency of reporting, other diseases and conditions will not be discussed here. However, all notifiable diseases and conditions, with the exception of lead poisoning, are presented in tables in the Appendix.

I. Vector-borne Diseases

Overview

The vector-borne diseases examined in this chapter include Lyme disease, malaria, and Rocky Mountain Spotted Fever (RMSF). A vector is an agent that is capable of transmitting disease from one organism to another.¹ The two primary vectors involved in the spread of these three diseases are ticks and mosquitoes.

Lyme disease takes its name from the town of Lyme, Connecticut where it was first identified in the U.S. in 1975.² Lyme disease is a bacterial infection resulting from infection with the spirochete *Borrelia burgdorferi* carried by the deer tick. In the early stages, Lyme disease affects the skin causing a red, ring-shaped rash called erythema migrans in 60% of affected persons. This stage may also include symptoms of fever, fatigue, headache, stiff neck, and joint pain and inflammation. Absent diagnosis and treatment, the disease can progress and affect other body systems causing skin lesions, palsy of the facial nerve, inflammation of the brain, and cardiac problems. Episodes of pain and swelling of the joints, especially the knees, may occur at intervals for years.³ The first vaccine against Lyme disease, Lymerix, was approved by the Food and Drug Administration in 1998.⁴

Rocky Mountain Spotted Fever is also a tick-borne disease. However, the causative spirochete *Rickettsia rickettsii* is carried primarily by ticks found on dogs and rodents. In contrast to Lyme disease, RMSF is generally sudden in onset with high fever, fatigue, deep muscle pain, severe headache, chills, nausea, and vomiting. Fifty percent of patients will develop a rash on the extremities including the palms of the hands and soles of the feet.³

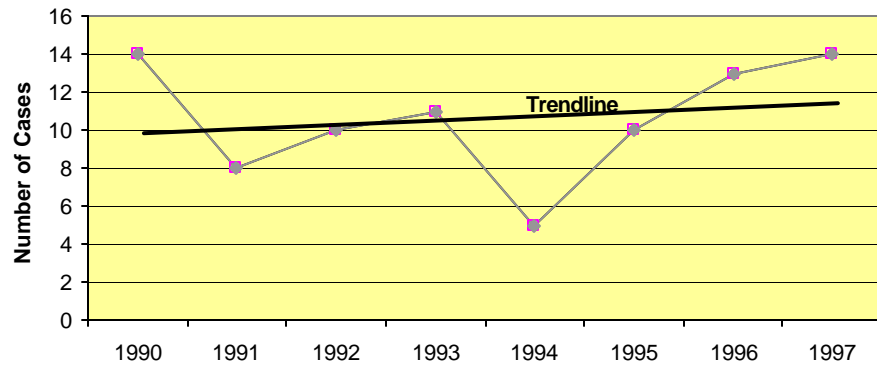
Malaria is transmitted by the bite of an infected female mosquito. Other transmission sources include blood transfusions and sharing of needles by drug users. Symptoms include fever, chills, sweats, cough, diarrhea, and headache. Undiagnosed or untreated it may lead to shock, kidney and liver failure, blood clotting problems, coma, and death. The disease may occur in cycles with periods of intense symptoms followed by periods of relatively mild symptoms. The symptom cycle generally coincides with the development cycle of the malaria parasite within the human body.³

Trend

A total of 85 vector-borne diseases were reported in Davidson County from 1990 through 1997, an average of 11 cases per year. Annual fluctuations in total reported cases were small with five cases reported in 1994 and fourteen cases reported in 1990 and 1997.

Lyme disease is the least frequently reported of the vector-borne diseases with 22 cases reported during the eight-year period under examination, an average of 3 cases per year. In 1990 and 1994, Davidson County had no reported cases of Lyme disease. Thirty-one cases of malaria (average of 4 cases per year) and thirty-two cases of RMSF (average of 4 cases per year) were reported from 1990 through 1997. See figure 28.

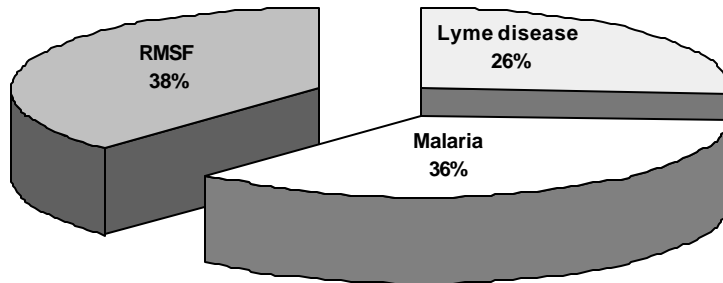
**Figure 28 : Reported Vector-borne Diseases*
Davidson County, Tennessee, 1990 - 1997**



*Includes Lyme disease, malaria, and Rocky Mountain Spotted Fever

The number of cases of vector-borne diseases per 100,000 population was 2.4 in 1996 and 2.6 in 1997.

**Figure 29 : Percent of Vector-borne Diseases by Type,
Davidson County, Tennessee, 1990 - 1997**



Who had more reported vector-borne disease in Davidson County?

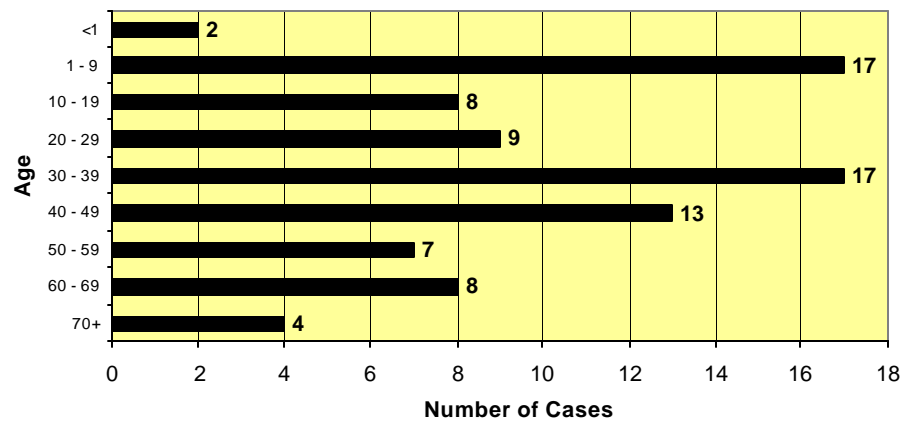
Vector-borne diseases reported in Davidson County from 1990 through 1997 occurred most often in persons who were:

- Between the ages of 1 - 9 or 30 - 39.
- Female.

Age

Most often and equally impacted by vector-borne diseases in Davidson County were the age-groups of one to nine and thirty to thirty-nine. Least likely to be affected by vector-borne diseases were those children under one year of age and persons over seventy years of age. See figure 30. RMSF was most often reported in the age-groups one to nine and forty to forty-nine.

Figure 30 : Reported Vector-borne Diseases* by Age, Davidson County, Tennessee, 1990 - 1997

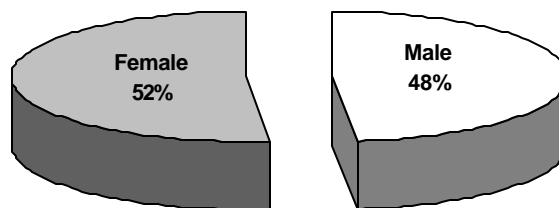


*Includes: Lyme disease, malaria, and Rocky Mountain Spotted Fever

Gender

Reported vector-borne diseases were unevenly distributed between males (48%) and females (52%). See figure 31. While Lyme disease was reported more often in women than men (64% / 36%), RMSF was reported more often in men than women (66% / 34%).

Figure 31 : Percent of Reported Vector-borne Diseases* by Gender, Davidson County, Tennessee 1990 - 1997

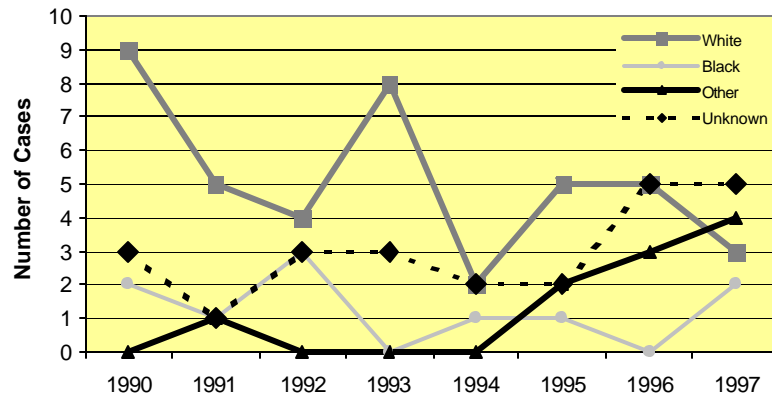


*Includes: Lyme disease, malaria, and Rocky Mountain Spotted Fever

Race

Information pertaining to race is unavailable for 24 of the 85 (28%) reported cases of vector-borne diseases. See figure 32. For cases with racial data available, vector-borne diseases were reported more frequently in persons of the white race. The exception is malaria, which was most often reported in persons of other races.

Figure 32 : Reported Vector-borne Diseases* by Race, Davidson County, Tennessee, 1990 - 1997



*Includes: Lyme disease, malaria, and Rocky Mountain Spotted Fever

Table 8 represents reported cases of vector-borne diseases by race and gender.

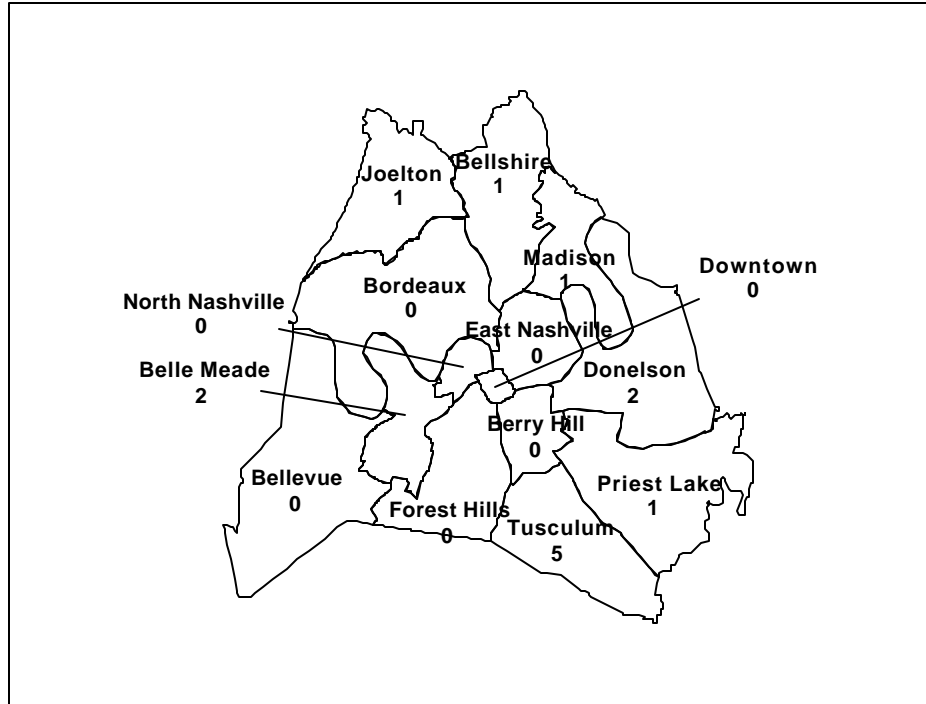
Table 8 : Reported Cases of Vector-borne Diseases by Race and Gender, Davidson County, Tennessee, 1990 - 1997

Year	All Races			White			Black			Other			Unknown		
	All	Male	Female	All	Male	Female	All	Male	Female	All	Male	Female	All	Male	Female
1997	14	8	6	3	3	0	2	0	2	4	1	3	5	4	1
1996	13	6	7	5	3	2	0	0	0	3	0	3	5	3	2
1995	10	5	5	5	4	1	1	1	0	2	0	2	2	0	2
1994	5	2	3	2	1	1	1	1	0	0	0	0	2	0	2
1993	11	4	7	8	3	5	0	0	0	0	0	0	3	1	2
1992	10	4	6	4	1	3	3	2	1	0	0	0	3	1	2
1991	8	4	4	5	3	2	1	1	0	1	0	1	1	0	1
1990	14	8	6	9	6	3	2	1	1	0	0	0	3	1	2
Total	85	41	44	41	24	17	10	6	4	10	1	9	24	10	14

Where were the most vector-borne diseases reported in Davidson County?

In 1997, five of fourteen persons diagnosed and reported with a vector-borne disease resided in the Tusculum/Crieve Hall community. Map 4 represents all reported vector-borne disease cases by planning district of residence.

Map 4 : Reported Cases of Vector-borne Disease by Planning District*, Davidson County, Tennessee, 1997



*Davidson County is divided into 14 planning districts (see Technical Notes). One case is not shown in this map due to unavailability of planning district information.

How does Davidson County rank within Tennessee in reported cases of vector-borne diseases?

Davidson County ranked first among the other metropolitan areas of Tennessee in number of reported vector-borne diseases in 1997. See table 9. Davidson County ranked first in reported cases of malaria and RMSF while Shelby ranked first for reported Lyme disease. In 1997, Hamilton County did not report any cases of Lyme disease or malaria. Davidson County's incidence rate for reported vector-borne diseases (2.6 per 100,000 population) was greater than that of the state (1.8 per 100,000 population).

Table 9 : Comparison of Vector-borne Disease Rates per 100,000 Population, 1997

Disease	Davidson		Hamilton*		Knox*		Shelby*		Tennessee*	
	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
Lyme Disease	3	0.6	0	0	3	0.8	8	0.9	45	0.8
Malaria	7	1.3	0	0	1	0.3	1	0.1	11	0.2
Rocky Mountain Spotted Fever	4	0.7	3	1	1	0.3	0	0	40	0.7
All Vector-borne Diseases	14	2.6	3	1	5	1.4	9	1	96	1.7

*Data from Assessment Information Manager (AIM), Tennessee Department of Health

II. Vaccine-preventable Diseases

Overview

Vaccine-preventable diseases included in the following discussion are measles, mumps, rubella, pertussis, and tetanus. Several other notifiable diseases such as polio, hepatitis B, hepatitis A, and diphtheria are preventable with vaccines. No cases of diphtheria or polio were reported in Davidson County from 1990 through 1997. Hepatitis A and B are discussed in Chapter 3 of this publication. Chickenpox and influenza are reported by number only, i.e., without any demographic information. Trends in reporting for these two diseases are represented in graphs at the end of this section and in tables in the appendix.

Measles, also known as rubeola or red measles, is an easily communicable viral disease. Primary symptoms include fever, red eyes, runny nose, cough, and rash. Complications include ear infections, pneumonia, diarrhea, and inflammation of the brain.

Rubella, or German measles, is generally a milder viral disease. Children may experience few symptoms at all while adults who contract rubella may have a low-grade fever, headache, malaise, mild runny nose, and red eyes. Arthralgias may be a serious complication of rubella in adults, especially adult women. Rubella may cause serious birth defects in children born to women infected with the disease during pregnancy. These defects may include deafness, cataracts, mental retardation, and heart defects.³

Mumps is another viral disease. Primary symptoms are swelling and tenderness of the salivary glands that may be accompanied by fever. Inflammation of the testes may occur in men. Inflammation of the brain and pancreas, nerve deafness, arthritis, and sterility are rare complications of mumps.³

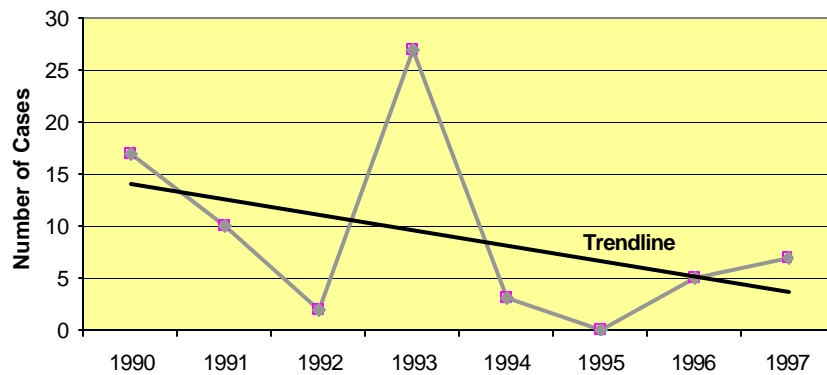
Pertussis (whooping cough) is a bacterial disease of the respiratory tract. This disease generally develops slowly with a cough that gradually becomes worse and eventually develops into spasms of coughing followed by a whoop as the affected person gasps to inhale air. The coughing spasms are so severe that vomiting may follow them. Pneumonia and brain inflammation are the two most serious complications.³

Tetanus (lock jaw), a disease which affects the nervous system, is contracted as a result of a wound which becomes contaminated with the tetanus bacillus. Stiffness of the muscles of the jaw and neck occur followed by difficulty swallowing, rigidity of the stomach, muscle spasms, sweating, and fever. Fatality rates are highest in infants and the elderly.³ Tetanus is not communicable from person to person, but it has great public health significance because as many as 90% of the people diagnosed may die of the disease and because the disease may be prevented by immunization with the tetanus toxoid.

Trend

A total of 71 vaccine-preventable diseases were reported in Davidson County from 1990 through 1997, on average, 9 cases per year. Of these cases, 27 (38%) were reported in 1993. The number of cases per 100,000 population in this peak year was 5.2. The number dropped dramatically over the next two years with no cases reported in 1995. Since 1995, the number has gradually increased. See figure 33.

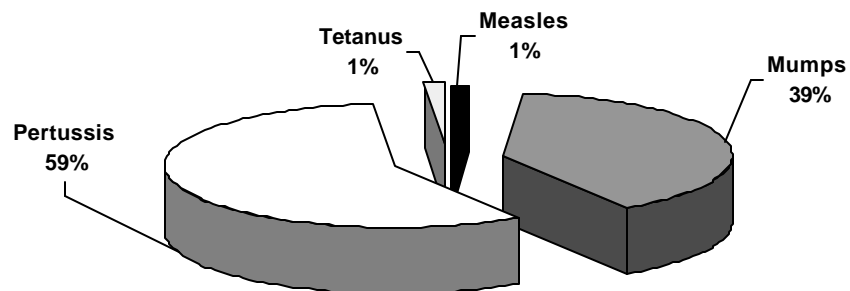
Figure 33 : Reported Vaccine-preventable Diseases*, Davidson County, Tennessee, 1990 - 1997



*Includes measles, mumps, pertussis, and tetanus

Pertussis is the most frequently reported vaccine-preventable disease in Davidson County, followed by mumps. One case of tetanus and one case of measles were reported from 1990 through 1997 (figure 34).

Figure 34 : Percent of Vaccine-preventable Diseases by Type, Davidson County, Tennessee, 1990 -1997



Who had more reported cases of vaccine-preventable disease in Davidson County?

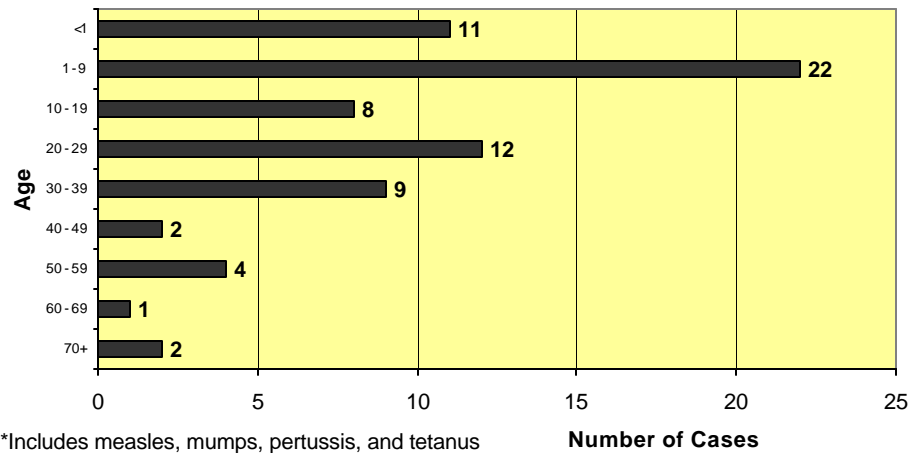
Reported cases of vaccine-preventable disease in Davidson County between the years of 1990 and 1997 occurred most commonly in persons who were:

- Between the ages of 1 - 9.
- Female.

Age

Almost half of the reported cases occurred in children under 10 years of age (33 of 71 cases or 46%). The age group affected most often following the 1 to 9 group was the 20 to 29 year old group (17%). Adults (persons over the age of twenty) accounted for 30 of the 71 reported cases (42%). See figure 35. Mumps and pertussis were both reported with the greatest frequency in the 1 to 9 year old age group. The second most affected age group when examining reported mumps cases, however, was the 30 to 39 year old age group.

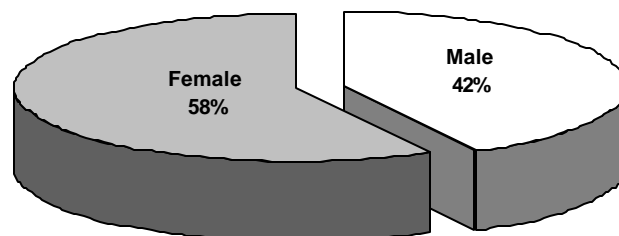
Figure 35 : Reported Vaccine-preventable Diseases* by Age, Davidson County, Tennessee, 1990 - 1997



Gender

Fifty-eight percent of reported vaccine-preventable diseases were female. Fifty-nine percent (24 of 41) of pertussis cases were female, and 57% (16 of 28) of mumps cases were female. See figure 36.

Figure 36 : Percent of Reported Vaccine-preventable Diseases* by Gender, Davidson County, Tennessee 1990 - 1997



Race

Race information was not available for one third of the reported vaccine-preventable disease cases. In cases where race information was available, the disease was reported as follows: 27 (57%) white, 18 (38%) black, and 2 (4%) other (figure 37).

Figure 37 : Reported Vaccine-preventable Diseases by Race, Davidson County, Tennessee, 1990 - 1997

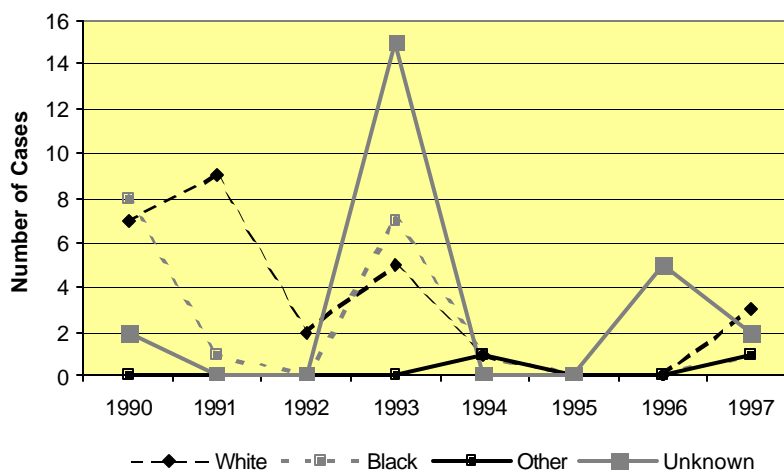


Table 10 presents reported cases of vaccine-preventable diseases by race and gender.

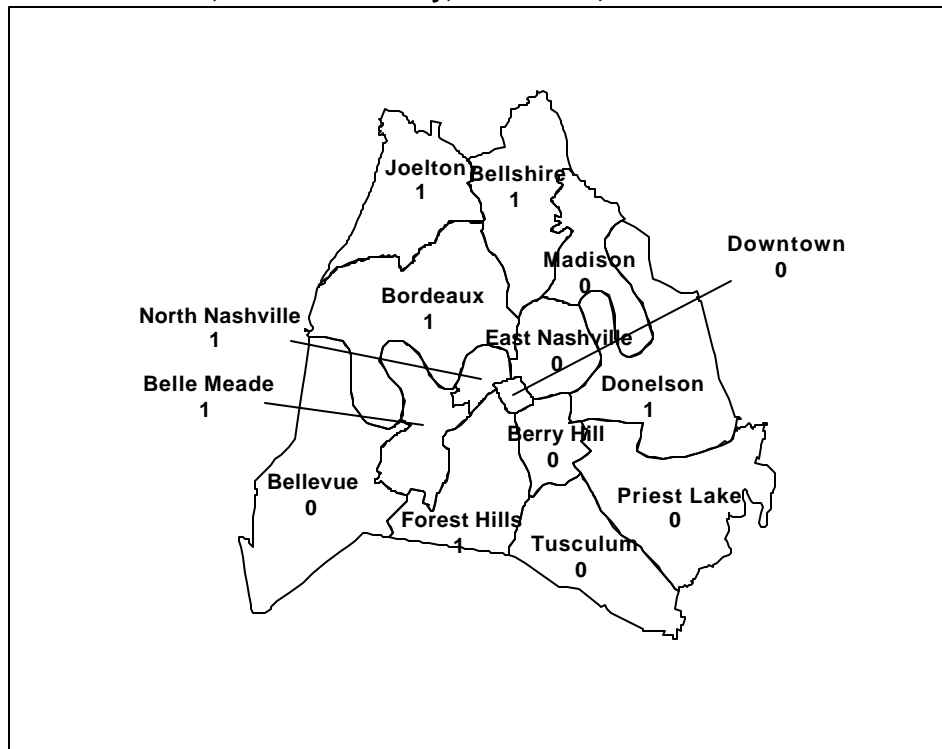
Table 10 : Reported Cases of Vaccine-preventable Diseases by Race and Gender, Davidson County, Tennessee, 1990 - 1997

Year	All Races			White			Black			Other			Unknown		
	All	Male	Female	All	Male	Female	All	Male	Female	All	Male	Female	All	Male	Female
1997	7	3	4	3	1	2	1	0	1	1	1	0	2	1	1
1996	5	0	5	0	0	0	0	0	0	0	0	0	5	0	5
1995	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1994	3	0	3	1	0	1	1	0	1	1	0	1	0	0	0
1993	27	14	13	5	3	2	7	2	5	0	0	0	15	9	6
1992	2	1	1	2	1	1	0	0	0	0	0	0	0	0	0
1991	10	6	4	9	5	4	1	1	0	0	0	0	0	0	0
1990	17	6	11	7	2	5	8	3	5	0	0	0	2	1	1
Total	71	30	41	27	12	15	18	6	12	2	1	1	24	11	13

Where were the most vaccine-preventable diseases reported in Davidson County?

As shown in map 5, the seven reported vaccine-preventable cases reported in 1997 were distributed evenly among the following seven planning districts: Joelton, Bellshire, Bordeaux, North Nashville, Belle Meade, Forest Hills, and Donelson.

Map 5 : Reported Cases of Vaccine-preventable Disease by Planning District, Davidson County, Tennessee, 1997



*Davidson County is divided into 14 planning districts (see Technical Notes).

How does Davidson County rank within Tennessee in reported cases of vaccine-preventable diseases?

Davidson County ranked first of the four metropolitan areas of Tennessee in incidence rate of reported chickenpox, tetanus, and mumps in 1997. The case of tetanus reported in Davidson County was one of only two reported in the state for the year. Davidson County's rate per 100,000 population was higher than the state rate for each disease examined with the exception of pertussis.

Table 11 : Comparison of Vaccine-preventable Disease Rates per 100,000 Population, 1997

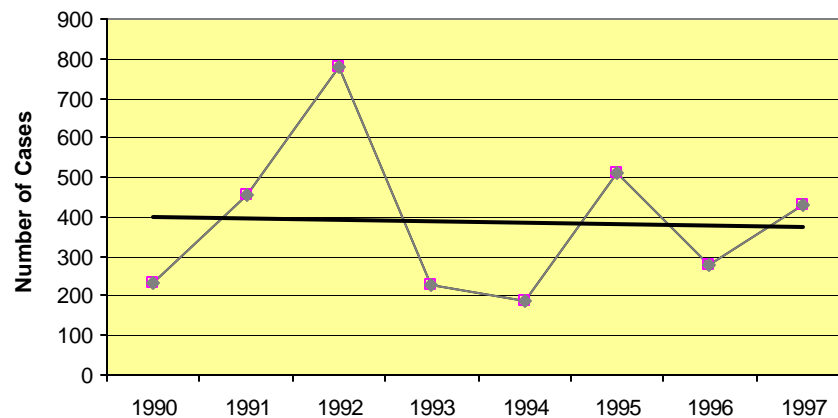
Disease	Davidson		Hamilton*		Knox*		Shelby*		Tennessee*	
	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
Chickenpox	430	79.8	10	3.4	84	23	215	24.8	1,407	26.4
Influenza	868	161	482	163.2	103	28.3	56	6.5	6,120	115
Measles	0	0	0	0	0	0	0	0	0	0
Mumps	4	0.7	0	0	1	0.3	1	0.1	10	0.2
Pertussis	2	0.4	1	0.3	1	0.3	12	1.4	42	0.8
Tetanus	1	0.2	0	0	0	0	0	0	2	0.0
All Vaccine-preventable Diseases	1,305	242.1	493	166.9	189	51.9	284	32.8	7,581	142.4

*Data from Assessment Information Manager (AIM), Tennessee Department of Health (excluding chickenpox and influenza)

Chickenpox and Influenza

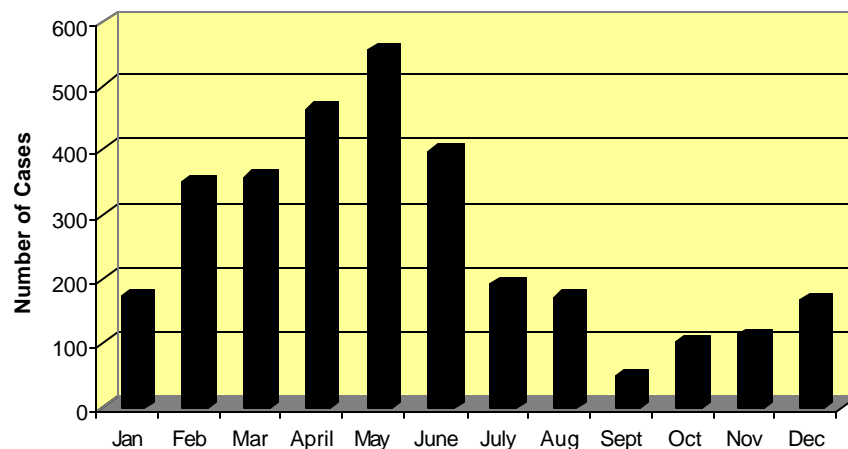
Reporting guidelines for chickenpox and influenza require only a total number of cases but no address, name, or other demographic information. Therefore, we present overall numbers and trend data for these two diseases in this report.

**Figure 38 : Reported Cases Chickenpox
Davidson County, Tennessee, 1990 - 1997**



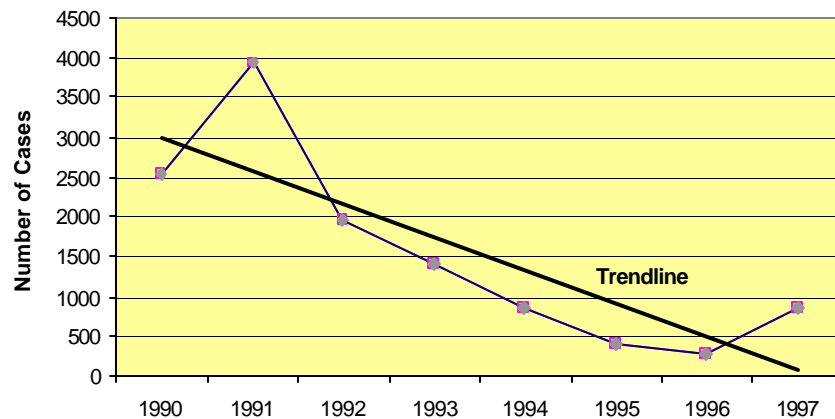
A total of 3,092 cases of chickenpox were reported in Davidson County from 1990 through 1997, an average of 387 cases per year. See figure 38. Almost one half (1,417 cases) were reported during the spring months. The month of fewest reported cases (49) is September. See figure 39.

**Figure 39 : Reported Chickenpox Cases by Month of
Report, Davidson County, Tennessee, 1990 - 1997**



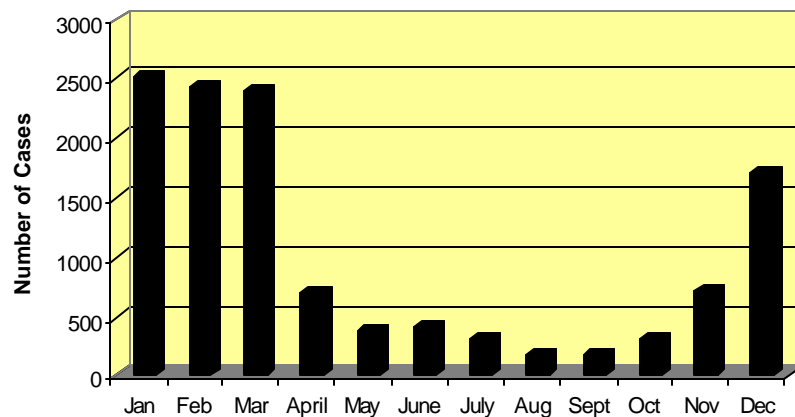
A total of 12,260 cases of influenza were reported in Davidson County between 1990 - 1997, an average 1,533 cases per year. See figure 40.

Figure 40 : Reported Influenza Cases, Davidson County, Tennessee, 1990 - 1997



Sixty percent (7,330 of 12,260) of influenza cases were reported during the months of January, February, and March. As with chickenpox, fewest cases of influenza were reported in September (172). See figure 41.

Figure 41 : Reported Influenza Cases by Month of Report, Davidson County, Tennessee, 1990 - 1997



III. Meningitis

Overview

Meningitis is an inflammation of the membranes lining the brain or spinal cord. Meningitis may have bacterial or viral causes. Symptoms include headache, fever, vomiting, lethargy, stiff neck, and in affected infants the "soft spot" on the head may bulge. The notifiable bacterial meningitis types discussed here are *haemophilus influenzae* serotype B, meningococcal, and other bacterial. Aseptic meningitis, caused by viruses, was reported from 1990 through 1996 by number only and without demographic information.

Haemophilus influenzae serotype b (Hib) is the bacteria that causes haemophilus meningitis. Before a vaccine was developed against these bacteria, it was the most common cause of meningitis in children under 5 years of age. However, since the

use of the Hib vaccine, *haemophilus meningitis* has declined dramatically. *Haemophilus influenzae* type b can cause other serious illness in persons affected such as pneumonia, arthritis, and inflammation of the sac surrounding the heart.³ In 1996, reporting requirements for *haemophilus influenzae* type b were changed to track not just meningitis but also the other types of infection caused by these bacteria.

Likewise, the meningococcus *neisseria meningitidis* may cause illness other than meningitis, including pneumonia and systemic infections. The fatality rate for meningococcal meningitis is between 5% and 15%.³ As with *haemophilus influenzae* type b the reporting requirements were changed in 1996 so that all meningococcal infections are reportable rather than only meningitis caused by these bacteria.

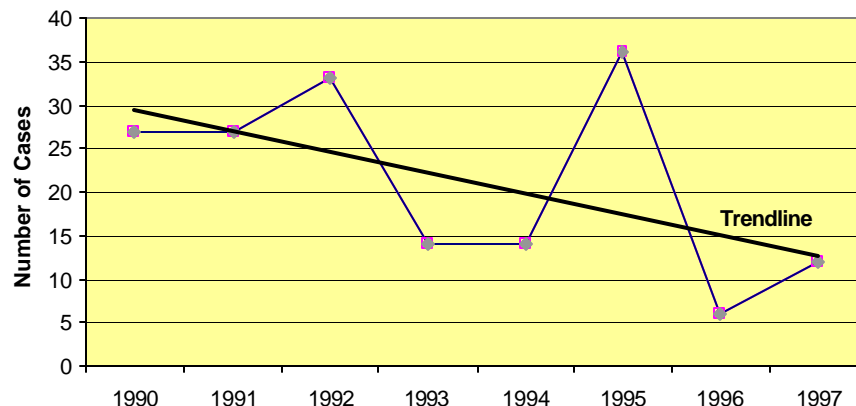
Several other bacteria may cause meningitis including staphylococci, Group B streptococci, and *Listeria*. Nationwide, meningitis caused by *streptococcus pneumoniae* is the third most common following Hib and pneumococcal.³

When examining the meningitis data, it is important to consider the changes in reporting requirements that occurred during the period of 1990 through 1997. Aseptic meningitis has not been required reporting since 1996. Reporting of *haemophilus influenzae* b and meningococcal meningitis also changed in 1996. Because these two bacteria can cause disease other than meningitis, the reporting category was changed accordingly to “*haemophilus influenzae* disease” and “meningococcal disease”.

Trend

A total of 169 cases of *haemophilus influenzae* type b, meningococcal, and other bacterial meningitis were reported in Davidson County from 1990 through 1997, an average of 21 cases per year. A total of 252 cases of aseptic meningitis were reported during the same time period. (See the graphs at the end of this section for presentation of aseptic meningitis data.) The 36 reported cases of meningitis in 1995 was the highest annual total. 1996 saw a significant decline with only six cases reported. The number of cases of meningitis per 100,000 population in 1995 was 6.8.

Figure 42 : Reported Cases of Meningitis*, Davidson County, Tennessee, 1990 - 1997

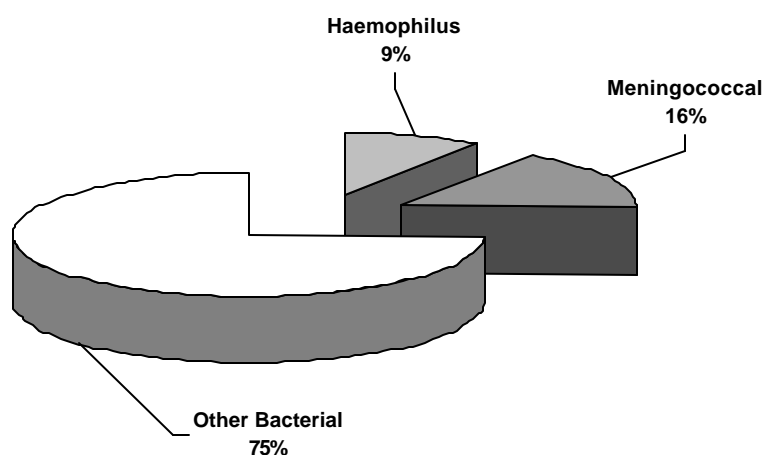


*Includes *haemophilus influenzae* type b, meningococcal, and other meningitis

In 1996, five cases of *haemophilus influenzae* disease and two cases of meningococcal disease were reported in addition to the meningitis as reflected in figure 42. In 1997, seven cases of *haemophilus influenzae* disease and eight cases of meningococcal disease were reported.

In terms of types of meningitis, the most reported type was other bacterial meningitis, (126 cases), followed by meningococcal meningitis (27cases). *Haemophilus influenzae* type b was the least reported type of meningitis (16 cases). No cases of Hib were reported in Davidson County in 1995. See figure 43.

**Figure 43 : Percent of Meningitis Cases by Type
Davidson County, Tennessee, 1990 - 1997**



Who had more reported cases of meningitis in Davidson County?

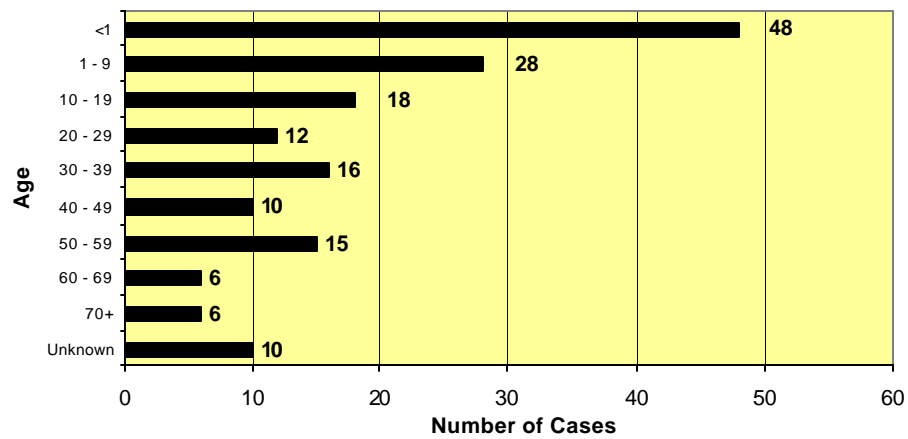
Meningitis in Davidson County from 1990 through 1997 occurred most often in persons who were:

- Under one year of age.
- Male.

Age

Age was unavailable for 10 (6%) of the 169 reported cases of meningitis. Of the reported cases where age is known, the majority, 30%, was in children under the age of one year. Ninety-four, 59%, of the cases with known age were under the age of twenty years. See figure 44.

**Figure 44 : Reported Meningitis* Cases by Age,
Davidson County, Tennessee, 1990 - 1997**

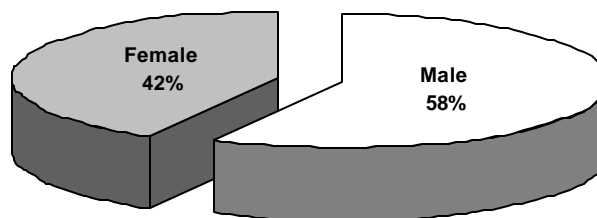


*Includes *haemophilus influenzae* type b, meningococcal, and other bacterial meningitis

Gender

Overall, more (58%) reported cases of meningitis were male (98 of 169 cases). See figure 45.

**Figure 45 : Percent of Reported Cases of Meningitis by
Gender, Davidson County, Tennessee, 1990 - 1997**



Race

Race information was unavailable for 21 of 169 reported cases (12%). See figure 46.

Figure 46 : Reported Meningitis* Cases by Race, Davidson County, Tennessee, 1990 - 1997

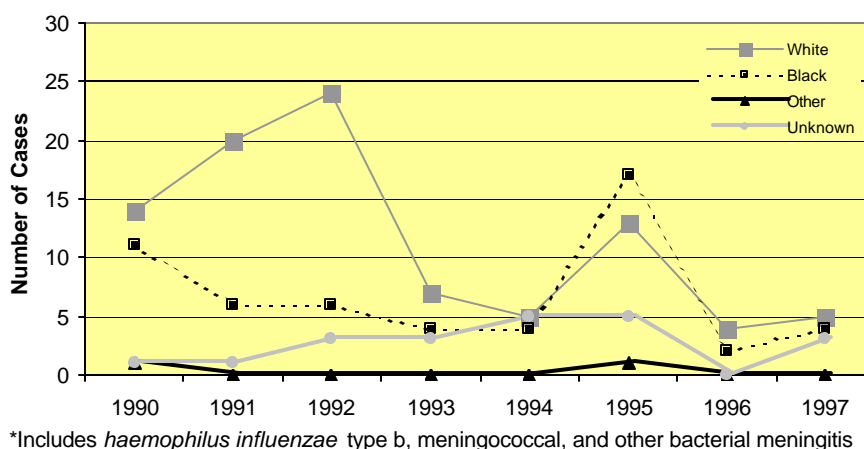


Table 12 represents reported meningitis cases by race and gender.

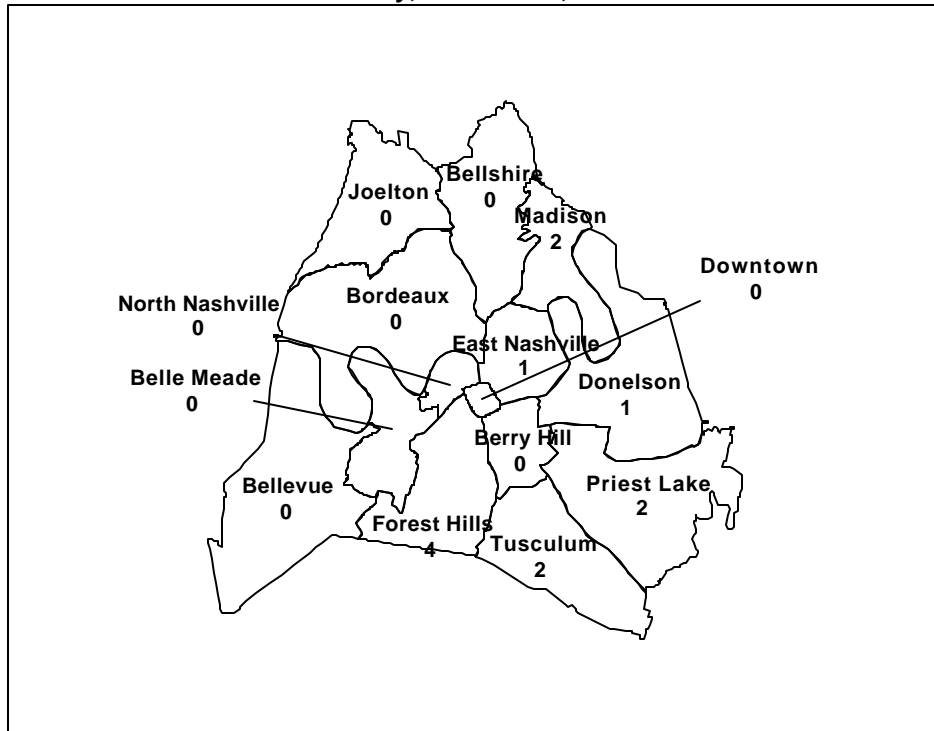
Table 12 : Reported Cases of Meningitis by Race and Gender, Davidson County, Tennessee, 1990 - 1997

Year	All Races			White			Black			Other			Unknown		
	All	Male	Female	All	Male	Female	All	Male	Female	All	Male	Female	All	Male	Female
1997	12	6	6	5	4	1	4	1	3	0	0	0	3	1	2
1996	6	5	1	4	3	1	2	2	0	0	0	0	0	0	0
1995	36	18	18	13	7	6	17	8	9	1	1	0	5	2	3
1994	14	7	7	5	3	2	4	1	3	0	0	0	5	3	2
1993	14	12	2	7	6	1	4	3	1	0	0	0	3	3	0
1992	33	17	16	24	11	13	6	3	3	0	0	0	3	3	0
1991	27	16	11	20	12	8	6	3	3	0	0	0	1	1	0
1990	27	17	10	14	7	7	11	9	2	1	1	0	1	0	1
Total	169	98	71	92	53	39	54	30	24	2	2	0	21	13	8

Where were the most cases of meningitis reported in Davidson County?

The reported cases of meningitis in Davidson County in 1997 were in six of the fourteen planning districts. They are Forest Hills, Madison, East Nashville, Donelson, Priest Lake, and Tusculum. One-third of reported cases were from the Forest Hills/ Oak Hill community. See map 6.

Map 6 : Reported Cases of Meningitis* by Planning District, Davidson County, Tennessee, 1997



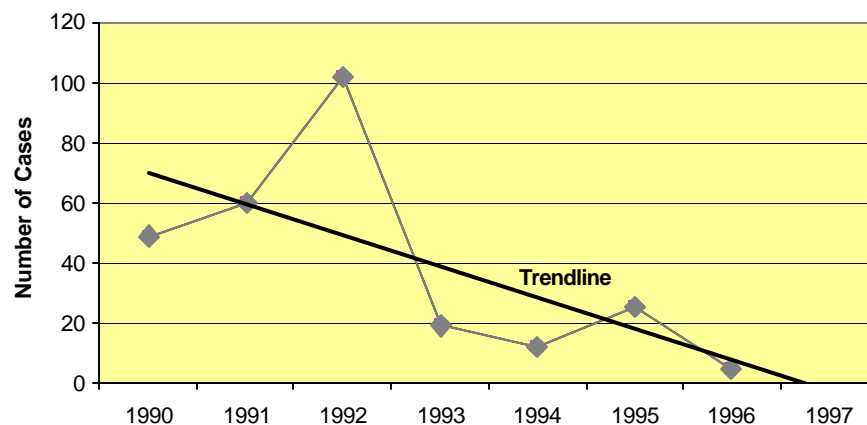
*Includes *haemophilus influenzae* b and meningococcal meningitis

**Davidson County is divided into 14 planning districts (see Technical Notes).

Aseptic Meningitis

Reported cases of aseptic meningitis peaked in 1992. This disease category (reported by number of cases only) ceased to be required reporting in 1996 when only five cases were reported in Davidson County. See figure 47.

**Figure 47 : Reported Cases Aseptic Meningitis
Davidson County, Tennessee, 1990 - 1997**



IV. Drug-resistant Bacteria

In response to the increasing global problem of resistance of bacteria to the antimicrobials available to treat them, the Tennessee Department of Health determined in 1997 to monitor the problem in Tennessee. Specifically, invasive (meningitis or bacteremia) drug-resistant *streptococcus pneumoniae* and Vancomycin-resistant enterococci became notifiable in Tennessee in 1997. (Some physicians and laboratories began reporting drug-resistance in 1996.)

Streptococcus pneumoniae can cause meningitis, pneumonia, and otitis media (ear infection). Historically, *streptococcus pneumoniae* was almost always treatable with penicillin. However, studies from Australia, Africa, Europe, and Southeast Asia have reported pneumococcal strains resistant to penicillin and other drugs. Because drug-resistance has not been reportable in the U.S., the prevalence of drug-resistant *streptococcus pneumoniae* (DRSP) is not known. In some communities, 30% of the *streptococcus pneumoniae* infections are partially or fully resistant to penicillin.⁵

Vancomycin-resistant enterococci (VRE) were first reported in the U.S. in 1989. Because there is no effective alternate antimicrobial therapy for many VRE, infection may lead to death in these cases. In the U.S., the majority of available data pertaining to VRE is in relation to transmission within the hospital setting. Studies outside the U.S., particularly England and Germany, are examining the possibility that VRE are also found in the environment (water samples from sewage treatment plants, livestock feces, uncooked chicken, and manure samples from pig and poultry farms).⁶

Figure 48 : Number of Reported Drug-resistant Bacteria, Davidson County, Tennessee, 1996 - 1997

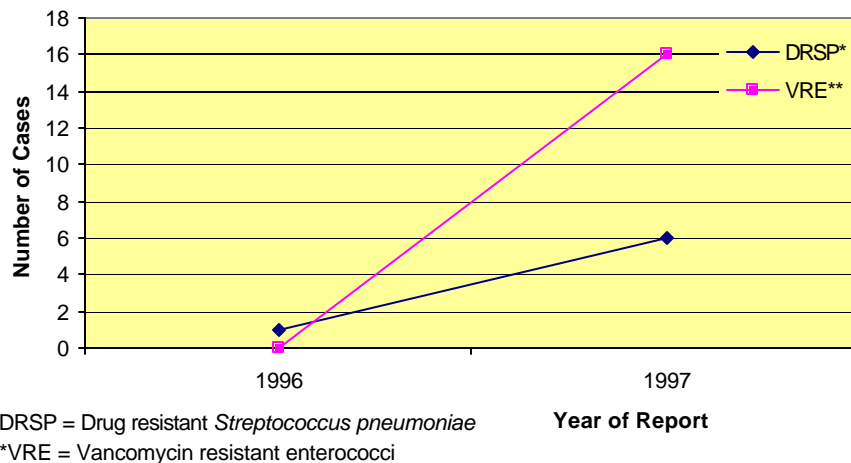


Figure 48 represents reported DRSP and VRE in the years 1996 and 1997 in Davidson County.

Davidson county ranked 3rd highest of the metropolitan areas of Tennessee in rate of reported DRSP but ranked first in reported VRE. Davidson County's DRSP rate of 1.1 per 100,000 was slightly below that of the state while the VRE rate was three times greater than the rate for the state of Tennessee. See table 13.

Table 13 : Comparison of Drug-resistant Bacteria Rates per 100,000 Population, 1997

	Davidson		Hamilton***		Knox***		Shelby***		Tennessee***	
Disease	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate	Cases	Rate
DRSP*	6	1.1	7	2.4	30	8.2	0	0	66	1.2
VRE**	16	3	0	0	2	0.5	0	0	38	0.7

*Drug-resistant *streptococcus pneumoniae*

**Vancomycin-resistant enterococci

***Data from Assessment Information Manager (AIM), Tennessee Department of Health